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LAND MANAGEMENT - FIRE MANAGEMENT POLICIES, DIRECTIVES, AND GUIDES IN THE NATIONAL FOREST SYSTEM:

A REVIEW AND COMMENTARY

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PREFACE

Since the analysis efforts on this paper were concluded, several major events have occurred that should be mentioned. First, a major change was made in Forest Service fire management policy. This revision allows variable fire suppression standards based upon land management objectives and values at risk. Second, the planning regulations for the National Forest Management Act have been issued. This action has resulted in a general change in both land management and fire management planning procedures, part of which are still being developed. Although these actions may date some of the review and comments in this paper, they do not negate their general worth as a historical perspective.

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RESEARCH SUMMARY

Laws, regulations, manual supplements and other regional and forest guidance were reviewed for specific or implied references to fire management. Fire management was mentioned as far back as the Organic Act of 1897; however, in much of the material reviewed response to fire was implied, not stated. Specific direction was limited, and implementation processes were lacking. Stronger guidance is desirable at all management levels. This report interprets and comments on laws applicable to the Forest Service relative to fire; reviews policy; and traces the evolution of the concept of integrating fire considerations in land management planning.

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INTRODUCTION

Forest Service employees concerned with either wildfire or prescribed fire activities have brought about or witnessed a tremendous change in attitudes toward fire in managing lands. In less than a decade, the agency has modified its policy from one of strict fire protection to one of designing fire protection and fire use programs to meet land management objectives. To most people this change appears to have been comprehensive and relatively swift. Actually, no single piece of legislation triggered the change. In fact, the authors interpret legislation from the Organic Act forward as permitting current policies. Certainly, the perceptions of problems, capabilities for fire protection, and personalities of specific eras in the past resulted in the interpretation of laws and formulations of policies. Inertia tended to maintain the course. Advances in technology and knowledge, increases in fire protection capabilities, and a more general knowledge of wildland ecology in the last decade provided an environment favorable for the "new look" at fire.

The authors make no claim to having exclusive insight. This report is intended to interpret and comment on laws applicable to the Forest Service relative to fire, to review policy, and trace the rapid evolution of the concept of integrating fire into land management planning.

Information presented here is intended to provide Forest Service planners, fire managers, and others with a review and summary of legislation, policy, statements, and manual directives that are general to fire management. It is hoped that calling out and interpreting key statements will constitute another step toward truly integrating fire and land management planning.¹

The perspectives and opinions relative to the material presented are those of the authors and are intended to stimulate comment and discussion. More detailed discussion of specific topics is certainly possible; however, we hope that this exposure will generate interest and questions that can be addressed in greater depth.

STUDY METHODS

Current Forest Service land management planning materials were obtained and reviewed. The Forest Service Manual, Section 8200 and amendments, was screened for fire and land management planning materials. Regional supplements to this section of the manual were obtained and screened. Special regional and forest planning guidance materials were also secured and reviewed as available.

Summaries of relevant policies, guidelines, and directives were developed. Narratives were prepared to discuss and comment on the implications of these directives. When necessary or appropriate, unique regional planning requirements were given special attention.

¹Barney, Richard J., and Rita P. Thompson. 1979. Fire and land management planning. Review draft. Intermt. For. and Range Exp. Stn., North. For. Fire Lab., Missoula, Mont.

In addition to the above outlined material, pertinent Federal legislation was also reviewed for policy, direction, limitation, and guidance. Items that directly or indirectly addressed fire and land management were identified and discussed. Landmark legislation such as the Organic Act, the National Environmental Policy Act of 1969 (NEPA), the Clean Air Act, the Federal Water Pollution Control Act, the Forest and Rangeland Renewable Resources Planning Act of 1974 (RPA) or amended Clean Air Act of 1976, and most recently the National Forest Management Act of 1976 (NFMA) were covered.

Review of these laws, policies, and other formal direction was conducted to identify those areas and places where specific impact on land management planning-fire management was either detailed or implied. Narrative summaries by type of document and categories of material found within were developed. Much of the initial review was done by the senior author.² The original effort has been reviewed and updated to include more recent laws, manual advice, and policy direction.

STUDY RESULTS AND DISCUSSION

Legislation

The following section presents laws and specific passages appropriate for inclusion in this report. Following each specific reference are comments as to the applicability and possible impact of the specific legislation noted. The basic sources for this information were found in USDA Forest Service Agricultural Handbook No. 453 and its Forest Service Supplement (USDA 1974b, 1976); Grad, *Environmental Law*, 1971; Schroth and Platter, *Nature, Law and Society*, 1974; and the statutes themselves.

Organic Administration Act of 1897.--Act of June 4, 1897 (30 Stat. 34, as amended; 16 U.S.C. 473-478, 479-482, 551). "The Secretary of Agriculture shall make provisions for the protection against destruction by fire and depredations upon the public forests and national forests"

The Forest Service must provide fire protection as an integral part of its management. Therefore management activities, including planning, must give major consideration to providing protection against destruction of fire. From a late 1970's perspective we recognize that the definition of "destruction" depends on management objectives. Fire size and the intensity of a fire are recognized as fire variables that, coupled with management objectives, determine whether or not a fire results in destruction. With this perspective, the mandate is not just to put out all fires. It requires land managers to prevent the occurrence of and to suppress fires that will result in destruction. Specifying management objectives and identifying fire prevention, presuppression, and suppression needs must be done in a planning exercise.

Clarke-McNary Act.--Act of June 7, 1924 (43 Stat. 653, as amended; 16 U.S.C. 471, 505, 515, 564, 565, 566, 567, 568, 569, 570).

²Barney, Richard J. 1976. Land use planning - fire management relationships and needs in the U.S. Forest Service. Ph.D. dissert., Mich. State Univ., East Lansing. 244 p.

Sec. 1. The Secretary of Agriculture is hereby authorized and directed, in cooperation with appropriate officials of the various States or other suitable agencies, to recommend for each forest region of the United States such systems of forest fire prevention and suppression as will adequately protect the timbered and cut-over lands therein with a view to the protection of forest and water resources and the continuous production of timber on lands chiefly suitable therefore (16 U.S.C. 564).

Sec. 2. If the Secretary of Agriculture shall find that the system and practice of forest fire prevention and suppression provided by any State substantially promotes the objects described in the foregoing section he is hereby authorized and directed, under such conditions as he may determine to be fair and equitable in each State, to cooperate with appropriate officials of each State, and through them with private and other agencies therein, in the protection of timbered and forest-producing lands from fire

Sec. 3. . . . investigate and promote practical methods of insuring standing timber on growing forests from losses by fire and other causes.

The last half of Section 1 bears a close look. Congress talks about "systems of forest fire prevention and suppression" that will "adequately protect" lands, with a goal of protecting forest and water resources and "continuous production of timber" on suitable lands. Our concept of fire prevention today encompasses a variety of approaches ranging from behavioral modification to engineering and fuel management. "Adequately protect" today can be construed to relate to identifying the reasonable risk that management is willing to assume. The last part refers to all forest resources, including a sustained supply of wood products, but from land suitable for production of those resources.

With today's perspective, the implication seems to be that Congress intended that values and land management objectives be tied to specific pieces of land and that the level of protection (prevention and suppression) applied be reasonable (cost effective). The Clarke-McNary Act is authorizing the Secretary to cooperate with others to support such systems of fire prevention and suppression on their lands, but it seems reasonable that Congress would expect the same concepts on Forest Service lands.

Although the Clarke-McNary Act is primarily one of cooperation with States in regard to fire, it does seem to indicate that the Forest Service must be aware of fire protection and its "state of the art." The Forest Service must be well versed in existing suppression systems as well as the needs of the ecosystems involved in order to determine what "adequate" protection is. This legislation certainly has an impact on fire management. As an indirect effect, there is an implication that the agency must be knowledgeable regarding fire. The net result is a clearer definition of fire and its place in the overall management spectrum.

McSweeney-McNary Act.--Act of May 22, 1928 (45 Stat. 699, as amended; 16 U.S.C. 581, 581a, 581a-1, 581b-581i).

Sec. 1. The Secretary of Agriculture is hereby authorized and directed to conduct such investigations, experiments, and tests as he may deem necessary under sections 2 to 10 inclusive, in order to determine, demonstrate, and promulgate the best methods of reforestation and of growing, managing, and utilizing timber, forage, and other forest products, or maintaining favorable conditions of water flow and the prevention of erosion, of protecting timber and other forest growth from fire, insects, disease, or other harmful agencies, of obtaining the fullest and most effective use of forest lands, and to determine and promulgate the economic considerations which should underlie the establishment of sound policies for the management of forest land and the utilization of forest products:

Although not directly connected to land management planning and fire management, Congress recognized the need for research in the area of fire. Congress identified specifics in the areas of growing and producing forest, resources, protecting those resources from fire and biological forces, and determining economic considerations that should be part of setting "good management policies." The significance of economic considerations increases daily. Efforts are underway to develop management policies that integrate economic considerations of all management activities. This would force all resource management functions and service functions into a single land management planning exercise. It is this enabling legislation that provides for fire research, such as this report. Without this support we would be unable to develop the scientific basis for today's forest management. Establishment of fire research provides additional recognition for the relationships between land management and fire management activities. Such action gives formal support for fire as a part of management.

Sustained Yield Forest Management Act.--Act of March 29, 1944 (58 Stat. 132, as amended; 16 U.S.C. 583-583i).

Sec. 1. In order to promote the stability of forest industries, of employment, of communities, and of taxable forest wealth, through continuous supplies of timber; in order to provide for a continuous and ample supply of forest products; and in order to secure the benefits of forests in maintenance of water supply, regulation of stream flow, prevention of soil erosion, amelioration of climate and preservation of wildlife. . . .

Although not explicitly stated in the above passage, it appears implicit that adequate steps in protection as well as all other phases of fire management must be taken to meet the obligations of this act. Such terms as continuous, ample, maintenance, prevention, amelioration, and preservation all indicate that forethought, planning, and care are "musts" in the management of our forest resources. Implied here is indeed a need to integrate fire and land management planning. Without such a "marriage," it does not appear that the legislative conditions can be met.

Cooperative Forest Management Act.--Act of August 24, 1950 (64 Stat. 473, as amended; 16 U.S.C. 568c, 568d).

Sec. 1. The Secretary of Agriculture is hereby authorized to cooperate with State foresters or appropriate officials of the several States, Territories, and possessions to provide technical services to private landowners, forest operators, wood processors, and public agencies, with respect to the multiple use management and environmental protection and improvement of forest lands, the harvesting, marketing, and processing of forest products, and the protection, improvement and establishment of trees and shrubs in urban areas, communities, and open spaces.

Here again, although the above act revolves around cooperation, it seems to be implicit that fire management-land management planning relationships must be considered. Without a thorough understanding of the management-fire ties, one cannot provide technical services "with respect to multiple use management and environmental protection and improvement of forest lands . . . and their protection" It is important to know where fire and land management planning, along with the eventual application and implementation, go together.

Forest Service Omnibus Act of 1958.--Act of June 20, 1958 (72 Stat. 216; 16 U.S.C. 502, 554b, 555, 556, 556b, 556c, 565b, 579c, 580f).

Sec. 5. The Secretary is authorized, subject to such conditions as he may prescribe, to transfer, without reimbursement or at such prices and upon such terms as he may impose, to States and political subdivisions of agencies thereof fire lookout towers and other structures or improvements used by the Forest Service for fire prevention or suppression purposes, and the land used in connection therewith if such land is outside national forest boundaries, when they are no longer needed for such purposes

Before one can determine whether fire management is needed or not, he must have a thorough grasp of just where fire fits into the overall management program. It is incumbent upon appropriate personnel to understand the needs and relationships. Without this understanding, decisions are made primarily from the position of fire control and prevention for fire control and prevention's sake. Therefore, one truly must have a perspective on land management and fire relationships.

Multiple Use-Sustained Yield Act.--Act of June 12, 1960 (74 Stat. 215; 16 U.S.C. 528-531).

Sec. 4. As used in this Act, the following terms shall have the following meanings:

(a) "Multiple use" means the management of all the various renewable surface resources of the national forests so that they are utilized in the combination that will best meet the needs of the American people; making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; that some land will be used for less than all of the resources; and harmonious and coordinated management of the various resources, each with the other, without impairment of the productivity of the land, with consideration being given to the relative values of the various resources, and not necessarily the combination of uses that will give the greatest dollar return or the greatest unit output.

(b) "Sustained yield of the several products and services" means the achievement and maintenance in perpetuity of a high-level annual or regular periodic output of the various renewable resources of the national forests without impairment of the productivity of the land. (16 U.S.C. 531)

The above act, especially 4(b), requires that fire be considered in land management planning and resulting management activities. Fire can enhance or reduce the level of specific resources, depending on the timing, location, and characteristics of fires. Management strategies and resulting activities change behavior of fires, and the effort and costs required to suppress fires. These factors must be assessed relative to their social and ecological acceptability when writing short- and long-range management plans.

National Forest Roads and Trails Systems Act.--Act of October 13, 1964 (78 Stat. 1089; 16 U.S.C. 532-538).

Sec. 1. . . . to provide for intensive use, protection, development, and management of these lands under principles of multiple use and sustained yield of products and services. (16 U.S.C. 532)

Sec. 4. The Secretary is authorized to provide for the acquisition, construction, . . . in locations and according to specifications which will permit maximum economy in harvesting timber . . . and at the same time meet the requirements for protection,

Even legislation regarding roads relates to protection, which in turn can be related to fire and fire management. If one is to consider "maximum economy in harvesting timber . . . and at the same time meet the requirements for protection," then certainly there must be an understanding of fire management-land management relationships.

Wilderness Act. --Act of September 3, 1964 (78 Stat. 890; 16 U.S.C. 1131-1136).

Sec. 2(c). A wilderness in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature with the imprint of man's work substantially unnoticeable. . . .

Sec. 4(d)(1). . . . In addition, such measures may be taken as may be necessary in the control of fire, insects, and diseases, subject to such conditions as the Secretary deems desirable.

The fire management implications of the Wilderness Act have been thoroughly discussed during the last decade. Congress described wilderness as an area where natural influences are to dominate those of man (Sec. 2(c)). In Section 4(d)(1) the Secretary of Agriculture is given the authority to identify fire control measures that may be necessary. To provide the management direction and supporting programs required by the Act, requires an evaluation of fires and prescriptions for handling them.

Congress allowed the land manager to prescribe the mix of fire use and fire suppression appropriate for each wilderness.

This act has recently attracted special interest, because under certain conditions fires have been "allowed to burn" in wildernesses under a special exception to the Forest Service 10 a.m. policy. A special opinion from the Office of the General Counsel held that the Forest Service exceptions are reasonable and legal. The General Counsel specifically referenced the above section of this act.³ This decision, although not a court-set precedent, may well have far-reaching implications with regard to land management planning and fire management.

³Fowler, Richard L. 1975. 10 a.m. fire control policy exceptions. Letter (5130 Suppression) to John R. McGuire, Chief, USDA Forest Service.

Wild and Scenic Rivers Act.--Act of October 2, 1968 (82 Stat. 906; 16 U.S.C. 1271-1287).

Sec. 10(a). Each component of the national wild and scenic rivers system shall be administered in such manner as to protect and enhance the values which caused it to be included in said system without, insofar as is consistent therewith, limiting other uses that do not substantially interfere with public use and enjoyment of these values. In such administration primary emphasis shall be given to protecting its esthetic, scenic, historic, archeologic, and scientific features. Management plans for any such component may establish varying degrees of intensity for its protection and development, based on the special attributes of the area.

The above section of this act could also have implications regarding land use planning and fire management. Although protection is the primary emphasis here, the phrase, ". . . enhance the values which caused it to be included in said system. . ." opens the door for other than a strict protectionist point of view relative to planning and fire management. Fire could indeed play an important role in the "protection and development" of a specific area.

National Environmental Policy Act of 1969.--Act of January 1, 1970 (P.L. 91-190); (83 Stat. 852; 42 U.S.C. 4321, 4331-4335, 4341-4347). The National Environmental Policy Act (NEPA) has perhaps had more impact on management activities of the Forest Service than any other legislation since its beginning over 70 years ago. Section 102 of this act, reproduced in part below, has probably the most direct effect.

Sec. 102. The Congress authorizes and directs that, to the fullest extent possible: (1) the policies, regulations, and public laws of the United States shall be interpreted and administered in accordance with the policies set forth in this Act, and (2) all agencies of the Federal Government shall--

(A) utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision-making which may have an impact on man's environment;

(B) identify and develop methods and procedures, in consultation with the Council on Environmental Quality established by title II of this Act, which will insure that presently unqualified environmental amenities and values may be given appropriate consideration in decisionmaking along with economic and technical considerations;

(C) include in every recommendation or report proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on--

- (i) the environmental impact of the proposed action,
- (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented,
- (iii) alternatives to the proposed action,
- (iv) the relationship between local short term uses of man's environment and the maintenance and enhancement of long-term productivity, and

- (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented.

Prior to making any detailed statement, the responsible Federal official shall consult with and obtain the comments of any Federal agency which has jurisdiction by law or special expertise with respect to any environmental impact involved . . .

(D) study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources . . .

(G) initiate and utilize ecological information in the planning and development of resource-oriented projects; . . .

Section 102 of NEPA certainly spells out what must be done for any major Federal action. Major Federal action has been interpreted to include the planning process itself. It should also be clear that any major use of fire regardless of the purpose must fall into the identification and review process set forth. Alternatives and consequences of fire use must be discussed in depth. This in turn requires a thorough understanding of the process and its effect on the system. Interdisciplinary aspects and integration of natural and social sciences is also an important consideration.

Environmental Quality Improvement Act of 1970.--Act of April 3, 1970 (83 Stat. 852; 42 U.S.C. 4371-4374).

. . . (d) In carrying out his functions the Director shall assist and advise the President on policies and programs of the Federal Government affecting environmental quality by-- . . .

(2) assisting the Federal agencies and departments in appraising the effectiveness of existing and proposed facilities, programs, policies, and activities of the Federal Government, and those specific major projects designated by the President which do not require individual project authorization by Congress, which affect environmental quality;

(3) reviewing the adequacy of existing systems for monitoring and predicting environmental changes in order to achieve effective coverage and efficient use of research facilities and other resources;

(4) promoting the advancement of scientific knowledge of the effects of actions and technology on the environment and encourage the development of the means to prevent or reduce adverse effects that endanger the health and well-being of man;

(5) assisting in coordinating among the Federal departments and agencies those programs and activities which affect, protect, and improve environmental quality; . . .

This act takes additional steps, beyond NEPA, to insure environmental quality. It attempts to insure implementation of environmental quality policies already established. Here, due to feedback to the President, support or control is perhaps more probable. As in the other cited acts, this, too, has important impacts on land management planning and fire management relations.

Clean Air Act of 1963 as amended. P.L. 88-206.--Considering State regulations now in effect under this act, this is indeed important to land use planning and fire management. Existing and planned use of fire comes under the regulatory powers of this act. Depending upon local application, fire use can be heavily restricted. Under this act States have regulatory powers over *all* agencies regarding air quality matters.

Federal Water Pollution Control Act Amendments of 1972.--(86 Stat. 816; 33 U.S.C. 1251). As in the Clean Air Act above, this legislation can have serious implications relative to fire. Contemplated extensive use of fire in planning and practice could also be affected by this act amendment. In turn, this would affect the fire-planning relationship in some situations.

Forest and Rangeland Renewable Resources Planning Act of 1974.--Act of August 17, 1974 (88 Stat. 476; 16 U.S.C. 1601-1610). This act may well come to have as much or more impact on the Forest Service management system as did NEPA. Although it is a little early to completely assess such impact potential, the requirements of this act could well exceed the time and energy currently required to comply with NEPA. The Resource Planning Act (RPA) states in part:

Sec. 2. . . . The Assessment shall be prepared not later than December 21, 1975, and shall be updated during 1979 and each tenth year thereafter, and shall include but not be limited to--

(2) an inventory, based on information developed by the Forest Service and other Federal agencies, of present and potential renewable resources, and an evaluation of opportunities for improving their yield of tangible and intangible costs and direct and indirect returns to the Federal Government;

Sec. 3. The Program shall include, but not be limited to--

(2) specific identification of Program outputs, results anticipated, and benefits associated with investments in such a manner that the anticipated costs can be directly compared with the total related benefits and indirect returns to the Federal Government;

Sec. 5 (b). In the development and maintenance of land management plans for use on units of the National Forest System, the Secretary shall use a systematic interdisciplinary approach to achieve integrated consideration of physical, biological, economic, and other sciences.

Sec. 8. NATIONAL FOREST SYSTEM PROGRAM ELEMENTS.--The Secretary of Agriculture shall take such action as will assure that the development and administration of the renewable resources of the National Forest System are in full accord with the concepts for multiple use and sustained yield of products and services as set forth in the Multiple-Use Sustained-Yield Act of 1960. To further these concepts, the Congress hereby sets the year 2000 as the target year when the renewable resources of the National Forest System shall be in operating posture whereby all backlogs of needed treatment for their restoration shall be reduced to a current basis and the major portion of planned intensive multiple-use sustained-yield management procedures shall be installed and operating on an environmentally-sound basis.

Sec. 9. TRANSPORTATION SYSTEM.--The Congress declares that the installation of a proper system of transportation to service the National Forest System, as is provided for in Public Law 88-657, the Act of October 13, 1964 (16 U.S.C. 532-538), shall be carried forward in time to meet anticipated needs on an economical and environmentally sound basis

Upon reviewing the above-quoted segments of this act, it appears implicit that fire is one of the serious considerations. Fire can be considered both from the control and use standpoints. The establishment of multiple use objectives, interdisciplinary approach, and transportation systems imply the consideration of fire both as a management tool and from the perspective of protection and that it should be viewed from a total land management context.

National Forest Management Act of 1976.--(90 Stat. 2949; 16 U.S.C. 1600). This act (NFMA) has been cited by many as a milestone and landmark legislation relative to Forest Service programs. A major part of the Act is devoted towards strengthening the Forest and Rangeland Renewable Resources Planning Act (RPA). One of the major points of the Act is the direction relative to land-management planning. Section 6 of the Act is directed at "National Forest System Resource Planning". This section states:

Sec. 6(f). Plans developed in accordance with this section shall--

(3) be prepared by an interdisciplinary team. Each team shall prepare its plan based on inventories of the applicable resources of the forest;

(g)(2) specifying guidelines which--

(C) provide for methods to identify special conditions or situations involving hazards to the various resources and their relationship to alternative activities:

(3) specifying guidelines for land management plans developed to achieve the goals of the Program which--

(A) insure consideration of the economic and environmental aspects of various systems of renewable resource management, including the related systems of silviculture and protection of forest resources, to provide for outdoor recreation (including wilderness), range, timber, watershed, wildlife, and fish:

(C) insure research on and (based on continuous monitoring and assessment in the field) evaluation of the effects of each management system to the end that it will not produce substantial and permanent impairment of the productivity of the land;

(h)(3)(i) Resource plans and permits, contracts, and other instruments for the use and occupancy of National Forest System lands shall be consistent with the land management plans. Those resource plans and permits, contracts, and other such instruments currently in existence shall be revised as soon as practicable to be made consistent with such plans. When land management plans are revised, resource plans and permits, contracts, and other instruments, when necessary, shall be revised as soon as practicable

Section 6(f)(3) states the requirements for interdisciplinary planning team. Fire specialists should indeed be part of the special inputs to a planning team, which is confirmed by Sec. 6(g)(2)(C). Fire specialists must assist in

specifying guidelines relative to fire hazards. Furthermore, this segment is in reality a legal justification and direction for integrating fire into land management planning. Additional support for fire inputs can be found in Sec. 6(g)(3)(A), which concerns protection. Even research is directed to evaluate the effects of each management system relative to productivity. Fire should certainly be an input in this endeavor. One final justification for the integration of fire into land management planning is in Sec. 6(h)(3)(i) where, "Resource plans . . . and other instruments . . . shall be consistent with land management plans". This section indicates that various fire management plans be tied to and a service for the more general land management plan. The thrust of this entire act certainly supports the integration of fire into the general land management planning process.

A more recent response to the NFMA and the sections referenced above can be found in a task force draft report.⁴ This report outlines an array of actions needed to comply with the legislative requirements. Although the document does not spell out how the job is to be accomplished, it does identify necessary inputs. Specific procedures on how to implement such direction are expected. This report shows that fire is to become a part of general planning.

Generally, the legislation discussed above can affect fire management and the planning process. In the more recent legislation, some specific questions may have to be decided in the courts before applications can be made. Managers must be aware of the legal constraints, and not exceed statutory authority. Much of the direction in respect to fire management and planning is implied and requires additional interpretation and guidance. The Forest Service Manual discussed in the following pages is one method of interpreting and applying legislation.

Forest Service Manual and Guidance

The Forest Service Manual (USDA 1975c, Sec 8200) offered only limited instruction on integrating fire considerations into land management planning. The initial reference was found in FSM 8213-9, Functional Planning. Here the manual states that functional plans such as Forest Fire Protection Plans "*will* be coordinated within the overall direction of forest plans. Forest functional plans also provide guidance to providing information on present levels and methods of management".

This section of the manual goes on to state that:

Functional plans thus help establish current production and potential goals for planning units. Functional plans will contain the technical specifics on the activities and projects that implement planning decisions Functional plans are dependent upon land use plans for validity and basic land use allocation. Conversely land use plans depend upon responsive functional plans and projects for information and implementation

Chapter 8220, National Forest System Land Use Planning Procedure, goes into considerable detail on the planning hierarchy and general procedures. Main topics covered are Planning Area Guides, Management Zones, Forest Land Use Plan, Forest

⁴U.S. Department of Agriculture, Forest Service. 1978. Fire considerations in forest planning - a fire management proposal. Fire in Land Management Planning Task Force, Washington, D.C. Working Draft No. 2. 46 p. mimeo.

Coordinating Requirements, Planning Units, Maintenance, Availability, and Graphics. Primarily the general "what" is outlined with a variety of items to consider enumerated. The specific "how" is apparently left to the planner's discretion. Although lack of detailed instructions is not necessarily bad it can waste time and result in nonuniform plans.

The first specific mention of fire comes under FSM 8226.2, Priority of Study for Planning Units, which enumerates criteria for determining study priorities. The last item in the list is: "Critical need to reevaluate fire, insect, and disease protection." Fire therefore is one factor to consider in establishing which planning unit to study. A following section, FSM 8226.41, includes the next reference to fire: "In order to develop a series of alternative management plans for a Planning Unit, one of the basic requirements is a knowledge of what things are available to work with or use." The section covers additional points about planning and information. It is specifically stated that:

A search of existing data sources should always be made before starting field inventory projects Following are a number of data sources useful in developing a complete inventory for planning.

- . . . f. Fire Prevention Plans
- . . . h. Preattack fire plans
- . . . k. Historical records used as:
 - . . . (1) Fire occurrence maps
 - . . . (4) Fire weather records

The foregoing items are the only explicit references to fire in Section 8200 of the Manual. However, one might consider fire implicit in FSM 8226.42, Environmental Potential: ". . . An understanding of the biological system with its inherent opportunities and constraints in producing needed products and outputs is basic to planning . . ." Here, fire as an ecological consideration, and the inclusion or exclusion of fire relative to management might be considered and integrated. How the latter is to be accomplished is still, at this point, a moot question.

The consideration of fire might further be covered in the process of alternate plan formulation and analysis as covered under FSM 8226.6 and FSM 8226.7, respectively. Here, too, no specific process is outlined, and any fire inclusion is apparently the prerogative of the planner or planning team.

Before leaving policy and guidance at the national level it is appropriate to cover fire plans mentioned earlier. In FSM 5100, Fire Management, the need and general direction for fire control and fire planning are outlined. Section FSM 5102, Objectives, includes the following statements:

The overall objective for fire management is to provide a fire protection and use program which is responsive to land and resource management goals and objectives.

Regional Foresters shall:

1. Provide a balanced fire management program which is cost effective and commensurate with threats to life and property, public safety, values, hazards, risks, and resources output targets.
2. Provide for prescription fire using either planned or unplanned ignitions to protect, maintain, and enhance production of National Forest resources.

3. Provide data, information, and coordination for full integration of fire use and protection in the development, analysis, and evaluation of alternative land management prescriptions, goals, and objectives.

In the next section 5103, the reviewed policy is stated as follows:

Policy. The basic fire management policy on National Forest System Lands is to provide well-planned and executed fire protection and fire use programs that are cost effective and responsive to land and resource management goals and objectives and supportive of RPA outputs.

In the sub-headings under policy more explicit ties between fire and land management are enumerated.

5103.1 Land Management Coordination. Forest Supervisors, in developing alternative land management prescriptions, objectives, and goals, shall:

1. Develop fire management objectives through interdisciplinary staff, line officer, and cooperator interaction.
2. Utilize appropriate fire management skills.
3. Analyze and evaluate effects of fire use and protection on resource outputs.

Regional Foresters will establish procedures to monitor, analyze, and evaluate fire management programs.

5103.2 Fire Management Areas. The use of fire management areas is extended to provide for an orderly transition from the current fixed protection objectives to interim fire management area objectives. Ultimately, fire management objectives will be developed through the land management planning process.

For each fire management area, Forest Supervisors shall determine objectives that include: (1) the standard of fire protection and fire use necessary to ensure that land management goals and objectives can be met, (2) measurable standards, such as, the maximum individual fire size, and tolerate annual and long-term allowable burned acreage, for established fire intensity levels, and (3) as appropriate, areas for treatment by prescription fire and a schedule for the required maintenance of these areas.

5103.3 Requirements. When developing fire management objectives and areas, Forest Supervisors shall:

1. Be responsive to existing land management goals and objectives.
2. Provide for interdisciplinary and cooperator involvement.
3. Utilize the environmental analysis process (FSM 1950).
4. Be responsive to the letter and intent of applicable laws and regulations.
5. Emphasize protection from threats to life, property, and public safety.
6. Provide for written agreement with affected cooperating landowners and agencies.
7. Emphasize economic considerations and provide for a cost-effective program consistent with management objectives.

The above-quoted segments certainly begin to tie fire and land management together. There is clear indication that the role of fire management is a function of management needs. This most recent manual revision ties well to the fire management-land management planning interface. These policy revisions provide a strong basis to develop procedures for actual implementation.

The Fuel Management chapter provides additional implicit support for integrating fire and land management planning. Under objectives, 5150.2, we find the following:

The objective of fuel management is to obtain fuel conditions which permit protection forces to meet fire control objectives established to ensure a sustained, high level of productivity of renewable resources, using methods which maintain environmental quality.

It would seem necessary here that to meet this objective, fire and land managers must coordinate activities. The land management planners and the fire managers must go through series of give-and-take sessions to arrive at workable plans. Land managers must state their needs and fire managers the resultant requirements. Eventual resolution will provide the viable action. It would appear, however, that both parties would benefit from an objective procedure that would assist them in developing the rationale for the decisions made.

Finally, in the last chapter of this section of the Manual, 5190, Management, we come to National Fire Planning. Objectives 1 and 2 quoted in part, are as follows:

1. To study scientifically the needs and application of fire control
2. To provide nationwide fire control performance standards to meet current resource management objectives

Here again is additional direction and support for fire managers and land managers to get together to plan. Obviously, integration of various phases of planning is authorized. Perhaps the problem lies not in the "what to do" but the "how to do it." Even though the general direction exists, the specific direction for implementation either does not, or it is relatively weak at this time. Management is either reluctant to state specific "hows" or feels that doing so would constrain their options. In either case, the basic problem of integrating planning still exists.

Some additional advice has been provided through a publication entitled, "Fire Management Considerations for Land Use Planning" (USDA 1974a). This paper develops three basic questions relative to fire management:

How does fire relate to the ecosystem within and adjacent to the unit of planning?

In terms of the above considerations, are the management alternatives being prepared really viable?

Given some viable management alternatives, what is the appropriate fire management direction?

The stated main objective of this publication is to ". . . facilitate the preparation of high quality and meaningful land use plans None of the individual 'considerations' are to be construed as management directions." The paper is divided into the six RPA resource systems: land and water; timber; recreation and wilderness; range; wildlife and fish; and human and community development. Following

each of these headings is a list of actions one could take, presumably in the planning process. But the publication does not seem to have a definite goal. Nor does it outline a process for systematic planning, let alone specific instructions for answering all the questions or accomplishing all the tasks. It does provide questions that may be relevant to a specific planning situation. However, there is need for a systematic approach to the problem to ensure objectivity and thoroughness. The material has been related to a fire management decision model which provides an additional perspective for application.⁵

Regional Manual Supplements and Advice

A Servicewide review of manual supplements in appropriate subject areas, planning and fire management, has provided additional perspective. Because of the constantly changing nature of this level and type of guidance, it is not appropriate to discuss each Region's supplements. A general review illustrated with specific examples should suffice.

Few Regions had specific references to fire and land management planning in the 8200 section of the Manual. Many of the documents reviewed were draft materials that had not been made a part of the system, but influenced planning activities throughout this evolutionary period.

Several types of planning guidance have been prepared at the regional level. Although some of these documents may be in draft stage, they are used throughout the various Regions by field personnel. Region 1 developed one document which discussed in more detail the process of preparing unit plans (USDA 1963). Although the document did not specifically mention fire, fire inclusion could be implied in several areas. The most relevant Region 1 advice has been issued as an informal interim guideline and is entitled, "Fire Management in Land Use Planning" (USDA 1975a). This document goes beyond the very general guidance issued from the Washington Office and discussed earlier (USDA 1974a) and provides more specific guidance for the planning team. Although this advice was admittedly skeletal, the need for and desire to develop more detailed and specific guidance was recognized.

The Rocky Mountain Region did not have any FSM 8200 supplements that specifically dealt with fire. The supplement did, however, specify the use of the Region's multiple use guide (FSM 2100) until regional area guides were completed (USDA 1975b). In this manual amendment, fire implications were covered in the coordination checklist under the air pollution and fire headings in Sections 2141.4--8. The primary emphasis was on slash burning and smoke in the air pollution category. Under the fire heading, fire questions were listed covering prevention, hazard, protection level, and type conversion.

In transmitting the draft copy of the Washington Office "Fire Management Considerations for Land Use Planning" document, the Assistant Regional Forester for Fire in Region 2 made the following statement⁶:

⁵Barney, Richard J., and Louis T. Egging. 1978. The relationship between "Fire Management Considerations for Land Use Planning" (1974 Gray Book) and the Egging Fire Considerations in Planning Model. Intermt. For. and Range Exp. Stn., North. For. Fire Lab., Missoula, Mont. Office Rep. 19 p.

⁶Sanderson, E. J. Memorandum, Region 2, 8210(5100), Elements of Land Use Planning, to Forest Supervisor, April 15, 1974. 2 p. with attachments.

To bring the broad concept of fire management into our planning process will require:

1. Understanding of fire as a process in forest land ecosystems and its impact upon ecosystem components . . .
2. Integration of our understanding and knowledge of fire processes and effects with the management objectives of each specific land unit. Plans should detail how management objectives may be enhanced or aggravated by fire management . . .
3. Identification of proper fire management actions and constraints . . .

The Southwestern Region had no manual supplements in the FSM 8200 category that dealt with fire and land use planning. However, the Region did develop an extensive document relative to planning and decisionmaking methods and criteria.⁷ This paper mentioned fire and fuels management in its discussion of inventory needs for planning. Throughout the remainder of this paper, one can infer that fire is or could be input in the various processes outlined. One might also infer that additional reference to fire might be included in inventory criteria for land use planning established in that Region. Regional planning personnel (Layser 1975) have documented their ideas for bringing fire considerations into management planning.

In mid-1975, land managers in the California Region presented a series of programs throughout the State to place land management planning in perspective (USDA 1975d). The sessions covered the entire spectrum of land management planning in the Region. One of the specific subtopics in the presentation centered around the relationship of fire planning to land management planning. A portion of the discussion covered the establishment of values and appropriate fire plans for protecting the resource and area involved. The managers noted that a land management alternative might not be feasible because of the cost of the necessary fire control. They did not cover, apparently, the application of fire as an integral management tool. This series of presentations, however, was an attempt at putting planning into perspective.

Although other Regions also developed advice to one extent or another, the few examples discussed above illustrate the general type of direction given. Today, most Regions are in the middle of developing new materials to support NMFA as well as the revised fire policy. The guidances will assist in the integration of fire and land management planning.

CONCLUSIONS AND RECOMMENDATIONS

The review of pertinent legislation and related agency guidance revealed several points. In respect to some of the legislation, there were several items that will affect land management planning-fire management relationships. These points were found as far back as the agency's Organic Act of 1897 and as recently as the National Forest Management Act of 1976. In much of the legislation reviewed, the consideration of fire management in combination with land management planning was implied. No lengthy or really specific guidance was found relative to the subject of integrating fire in land management planning.

⁷Layser, Earle F. 1975a. Methods and criteria for a planning and decisionmaking process. USDA For. Serv., Southwest. Reg., Albuquerque, N.M. draft, 51 p.

The legislation reviewed can indeed restrict fire management and the planning process. Managers must be aware of the legal constraints to avoid exceeding their statutory authority.

The review of agency guidance, primarily the Forest Service Manual, in this specific area of planning did not reveal much direction other than in a broad context. No specific processes were found and much of the advice only enumerated items to consider or coordinate between functions. Even though general direction exists, the specific direction for implementation either does not exist or is relatively weak at this time. Regional manual supplements did not improve the specific direction to any great degree.

Although specific information and directives may be scarce, some planning teams have developed informal methods for identifying and integrating fire-land use planning relationships. Because of the current lack of unifying national direction on this and perhaps related topics, each planning level does what it perceives as best and most important. Resulting planning products provide a range from none to some material in regard to their consideration and integration of fire management. Several major efforts are currently underway to help resolve noted deficiencies.

Results of this report indicate that legislation, Servicewide manual guidance, regional manual supplements, and other related material lack specific direction for integrating fire management with land use planning. Before solid progress can be made, existing guidance must be more clearly interpreted, must become more specific, and must provide direction. Without such action, efforts toward fire management will lack uniformity and efficiency.

It is recommended that more centralized and stronger guidance be provided at all levels in land management planning, with emphasis on integrating fire management. In addition, clearer interpretation, specific processes, and more detailed management planning are necessary. A planning tool that would display consequences of management alternatives as they relate to fire over time would be desirable. This includes the effect of resource management on fire management strategies as well as the converse.

An interdisciplinary review team should be developed. This team would be responsible for reviewing legislation, policy, and guidelines relative to fire management and land management planning on a broader base than possible in this report. A result of such efforts would be a more comprehensive interpretation of existing guidance. In addition this team could prepare recommendations as to appropriate additions or deletions to existing direction in order to make it more relevant to today's management climate.

There needs to be an improved and generally understandable interpretation of the laws that relate to planning and fire management. Policies can then be changed or developed as a direct result of such clarification. Section 8200, 5100, 1200, and others in the Forest Service Manual can then logically be broadened to respond to policy changes and clarification. Servicewide, universal, planning processes should be developed which will utilize established constraints in developing management options and alternative strategies.

We must define what we (the public and the professional) want and need from our resource base. We must determine where we are headed in both the long and short run and how we are going to get there. The definition of objectives, clarification, and intensification of explicit direction does not exclude change. It does, however, provide a clearer, more definitive and duplicatable response on what we are intending in our management planning activities. Management options are not limited, but clarified. There will be management by directives rather than by default.

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The Intermountain Station, headquartered in Ogden, Utah, is one of eight regional experiment stations charged with providing scientific knowledge to help resource managers meet human needs and protect forest and range ecosystems.

The Intermountain Station includes the States of Montana, Idaho, Utah, Nevada, and western Wyoming. About 231 million acres, or 85 percent, of the land area in the Station territory are classified as forest and rangeland. These lands include grasslands, deserts, shrublands, alpine areas, and well-stocked forests. They supply fiber for forest industries; minerals for energy and industrial development; and water for domestic and industrial consumption. They also provide recreation opportunities for millions of visitors each year.

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